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PN   - JP4122835 A 19920423
TI   - SPECTROSCOPY
AB   - PURPOSE:To conduct spectroscopic measurement of high sensitivity by a method wherein a signal light and a variable-wavelength laser light are made to enter an optical fiber, a phenomenon of stimulated Brillouin scattering is made to occur in the optical fiber and the specified wavelength of the signal light is amplified, while the wavelength of the laser light is varied.

- CONSTITUTION:When a signal light from a sample and a variable-wavelength laser 3 are made to enter an optical glass fiber 9, the signal light of which the specified wavelength is amplified and the laser light of which the wavelength is varied are turned into electric signals. Since the signal light from the sample is amplified without being attenuated, spectroscopic measurement of high sensitivity can be conducted and spectroscopic analysis of a trace component is enabled. When a laser for sample excitation is applies to the sample, a scattered light is emitted by a photon-electron mutual action on the occasion. This scattered light turns to be the signal light. Moreover, the signal light is made to enter from one end of the optical glass fiber 9 and the laser light from the other. Thereby a light 21 of stimulated Brillouin scattering is emitted from the fiber 9. The scattered light 21 emitted from the fiber 9 is made to enter a Fabry-Perot interferometer 23. In the inteferometer 23, this scattered light is separated into its spectral components, so that a Rayleigh ray and a ray of stimulated Raman scattering be separated. The dependence of the intensity of the ray of stimulated Raman scattering on the wavelength of the variable-wavelength laser light is measured.

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